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IMPORTANCE OF THE CONSTRUCTION SECTOR & CIVIL CONSTRUCTION IN THE NORTHERN QUEENSLAND REGIONAL ECONOMIES

The construction sector plays a vital role in Queensland's northern regional economies. Apart from direct expenditure and employment generated in the economy, there are important "flow-on" benefits, especially to manufacturing, electricity, gas and water, wholesale, transport and storage, finance and other business and government services. However, construction activity also results in investment in larger and more efficient economic infrastructure resulting in substantial ongoing benefits to the economy.

Area Defined

For the purpose of this analysis, northern Queensland covers the regions:

- Based on the city of Cairns and including north to the Papua New Guinea border and west to the Gulf;
- Based on the city of Townsville west to Mt Isa and the Northern Territory border;
- Based on the city of Mackay and including Whitsundays and Isaacs.

(See Map, [Appendix 1](#)).

The Sector Defined in Statistics

[Appendix 2](#) gives definition of the construction sector in the Australian and New Zealand Standard Industrial Classification (ANZSIC).

For analysis, the sector is generally broken into four groups:

- 1) Building construction - dwellings
- 2) Building construction - non-dwellings
- 3) Heavy and civil engineering construction
- 4) Construction services

Within these classifications, civil construction is covered by the:

Heavy & Civil Engineering Construction

- Road and bridge construction
- Other heavy and engineering construction

Construction Services

- Land development and site preparation
- Land development and subdivision
- Site preparation services

It should be noted that part of the “Other heavy and engineering construction” will not involve civil contractors. On the other hand, in construction services is Landscaping, but only a part of this is likely to relate to the civil construction contractors.

Estimated Direct Employment in the Construction Sector

The latest 2016 Census gives a snapshot of direct employment in the sector.

Table #1: Employment in the Construction Sector (place of residence), 2016 Census

	Construction	Total Workforce	% Construction
Cairns SA4	8,304	106,148	7.8%
Outback Far North SA3	754	10,997	6.9%
Total Cairns Region	9,058	117,145	7.7%
Townsville SA4	7,987	103,917	7.7%
Outback North SA3	669	13,884	4.8%
Total Townsville Region	8,645	117,801	7.3%
Total Mackay Isaac Whitsunday Region	5,449	78,391	7.0%
Overall Total	23,152	313,337	7.4%

Source: Cummings Economics from ABS Census 2016.

Thus, at the time of the 2016 Census, the Cairns/Far North region led in total number in construction in the workforce representing about 40% of the total and 7.7% of the regional workforce. In the total northern Queensland regions, some 23,000 were recorded as being employed representing 7.4% of the total workforce. However, the level and proportion has varied over time.

Table #2: Level of Construction Workforce & Percentage of Total Workforce, Census 2006/2011/2016

	2006		2011		2016	
	No.	%	No.	%	No.	%
Cairns SA4	8,936	9.3%	9,171	8.9%	8,304	7.8%
Outback Far North SA3	570	4.8%	672	5.9%	754	6.9%
Townsville SA4	8,492	9.0%	9,804	9.2%	7,987	7.7%
Outback North SA3	839	5.3%	931	6.4%	669	4.8%
Mackay Isaac Whitsunday	6,951	9.6%	8,241	9.7%	5,449	7.0%
Total	25,788	9.0%	28,819	9.0%	23,163	7.4%

Source: Cummings Economics from ABS Census data.

Thus, over the five years 2006 to 2011, total numbers rose by 12% and then 2011 to 2016 dropped back by 20%, mainly due to very strong falls in the Mackay region and the Townsville/Outback North region as a result of the retreat of mining construction. As a proportion of workforce, total fell from 9.0% to 7.4%.

Highest proportion of the workforce reached was in the Mackay region in 2011 at 9.7%.

The indications are that it is normal that direct employment in construction in the region represents about 7% to 9% depending on economic conditions.

Building Approvals

Building approvals cover a substantial part of construction activity although they do not cover all construction activity, especially of a great deal of civil construction.

The following table gives building approvals recorded by the Australian Bureau of Statistics over the past five financial years.

Table #3: Building Approvals – Northern Queensland Regions

	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Total
Number of Dwellings	No.	No.	No.	No.	No.	No.
Cairns SA4	917	1,241	1,209	1,105	1,549	6,021
Outback Far North SA3	119	121	133	217	160	750
Total Cairns/Far North Region	1,036	1,362	1,342	1,322	1,709	6,771
Townsville SA4	1,733	1,609	943	892	735	5,912
Outback North SA3	90	52	21	49	22	234
Total Townsville/North Region	1,823	1,661	964	941	757	6,146
Total Mackay Isaac Whitsunday Region	561	588	395	254	522	2,320
Overall Total	3,420	3,611	2,701	2,517	2,988	15,237
Value of Approvals	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Cairns SA4	518	583	539	764	918	3,322
Outback Far North SA3	49	68	75	138	132	462
Total Cairns/Far North Region	567	651	614	902	1,050	3,784
Townsville SA4	677	812	635	678	697	3,499
Outback North SA3	100	39	29	35	20	223
Total Townsville/North Region	777	851	664	713	717	3,722
Total Mackay Isaac Whitsunday Region	760	343	224	200	601	2,128
Overall Total	2,104	1,845	1,502	1,815	2,368	9,634

Source: Cummings Economics from ABS data.

The table indicates that although there has been a change in pattern between the three major regions (with Townsville and Mackay higher in 2013-14 and 2014-15 but Cairns higher in 2016-17 and 2017-18):

- Overall levels of dwelling approvals have averaged out at about 3,000 per annum (high 3,600, low 2,500);
- Overall value of building approvals has averaged out at about \$2bn per annum (high \$2.4bn, low \$1.5bn).

Estimated Employment in Civil Construction

Based on data from the 2016 Census, estimated employment in the classifications related to the Civil Construction sector was as follows.

Table #4: Employment Civil Construction Sector & Construction Overall, 2016 Census

	Cairns SA4	Townsville SA4	Mackay - Isaac – Whitsunday SA4	Outback Far North SA3	Outback – North SA3	Total
House Construction	1279	872	617	215	40	3022
Other Residential Building Construction	503	284	265	39	23	1108
Non-Residential Building Construction	560	798	276	20	33	1695
Road and Bridge Construction	524	688	434	81	92	1819
Other Heavy and Civil Engineering Construction	270	514	421	17	40	1262
Land Development and Subdivision	34	46	11	5	0	96
Site Preparation Services	424	389	493	81	60	1447
Concreting Services	271	314	236	10	18	848
Bricklaying Services	78	78	28	9	0	194
Roofing Services	91	114	38	0	0	243
Structural Steel Erection Services	32	58	45	0	6	141
Plumbing Services	582	555	362	38	41	1578
Electrical Services	1019	1015	723	71	149	2976
Air Conditioning and Heating Services	182	181	136	3	4	506
Fire and Security Alarm Installation Services	63	120	92	0	10	285
Other Building Installation Services	50	51	18	0	0	119
Plastering and Ceiling Services	185	161	94	4	3	447
Carpentry Services	587	442	229	60	38	1357
Tiling and Carpeting Services	221	192	120	13	5	551
Painting and Decorating Services	484	431	278	29	26	1247
Glazing Services	100	96	69	3	9	276
Landscape Construction Services	420	282	154	24	20	899
Hire of Construction Machinery with Operator	55	45	100	5	26	231
Other Construction Services nec	290	259	211	20	26	806
Overall Total	8301	7986	5450	749	668	23154
Total Civil Construction	1252	1637	1359	184	192	4624

Source: Cummings Economics from ABS Census 2016.

The figures for Civil Construction could include some heavy engineering outside of Civil Construction but not include some in Landscaping.

Based on information from the sector, it is estimated that civil contractors would account for about 60% of employment in the “Other heavy and engineering construction” and say 10% of Landscaping. Thus, the indications from the Census data is that total direct employment was of the order of 4,200 or about 18% of the total construction employment. Employment of 4,200 compares with House and Non-House Dwelling Construction 4,100 and Non-Residential Building 1,700.

Modelled Estimates of Value of Output - Civil Construction

Models of the Australian and of regional economies in the northern regions (see Statistical Note Appendix 3), indicate that for Heavy and Civil Engineering for every person directly employed “output” (turnover) of approximately \$0.6m is involved and for Construction Services, an “output” of about \$0.4m is involved. On this basis, estimated output of the Civil Construction sector as defined could be expected to be of the order of \$2.2bn per annum.

Modelled Estimates of “Direct” & “Flow-on” Effects – Civil Construction

Civil construction work generally requires a substantial input of material and services into projects. Civil construction is thus estimated to have a large “flow-on” impact on other sectors.

Estimated total impact on the economy based on models of the regional economy calculations gives order of magnitude as follows.

Output	\$2.2bn
Est Direct Employment.....	4,200
Est Total Employment incl “flow-on” effects.....	11,500
Est Total Impact on Gross Regional Product.....	\$2.0bn

Gross Regional Product in the northern Queensland regions as defined is estimated to be of the order of \$48bn. Thus, Civil Construction including “flow-on” effect is estimated to contribute of the order of 4% of the area’s Gross Regional Product and 4% of total employment.

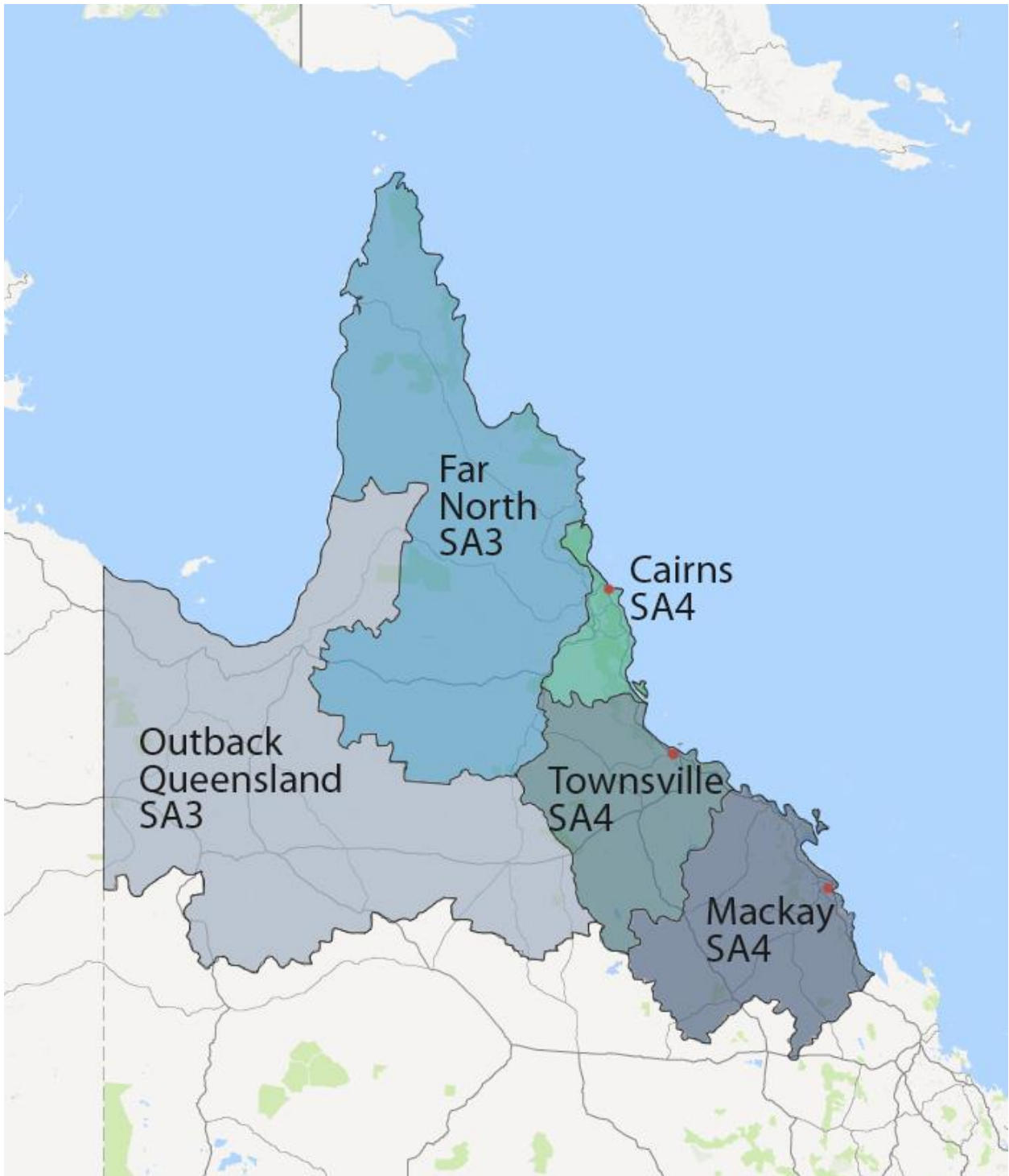
Modelled Estimates of “Flow-on” Impacts Construction Sector Overall

Based on regional models of the economy, the following calculates estimated total annual impacts of the Construction sector overall.

Est “Output”	\$9.8bn
Direct Employment	23,000
Est Total Employment including “flow-on”	57,000
Est Total Impact on Gross Regional Product.....	\$8.3bn

Thus, Construction including “flow-on” effects is estimated to contribute about 18% to the area’s Gross Regional Product and underpin employment of the order of 57,000, ie. about 18% of workforce.

Map: Northern Queensland Regions Statistical Areas



APPENDIX 2

Construction Sector as defined by Australian Bureau of Statistics in ANZSIC (Australian & New Zealand Standard Industrial Code)

Construction

Building Construction

Residential Building Construction

House Construction

Other Residential Building Construction

Non-Residential Building Construction

Non-Residential Building Construction

31 Heavy and Civil Engineering Construction

Heavy and Civil Engineering Construction

Road and Bridge Construction

Other Heavy and Civil Engineering Construction

32 Construction Services

321 Land Development and Site Preparation Services

3211 Land Development and Subdivision

3212 Site Preparation Services

322 Building Structure Services

3221 Concreting Services

3222 Bricklaying Services

3223 Roofing Services

3224 Structural Steel Erection Services

323 Building Installation Services

3231 Plumbing Services

3232 Electrical Services

3233 Air Conditioning and Heating Services

3234 Fire and Security Alarm Installation Services

3239 Other Building Installation Services

324 Building Completion Services

3241 Plastering and Ceiling Services

3242 Carpentry Services

3243 Tiling and Carpeting Services

3244 Painting and Decorating Services

3245 Glazing Services

329 Other Construction Services

3291 Landscape Construction Services

3292 Hire of Construction Machinery with Operator

3299 Other Construction Services n.e.c.

APPENDIX 3

Statistical Note

Input/output models are constructed of regional economies using input/output coefficients at national level published by the Australian Bureau of Statistics. These coefficients provide information on where inputs will come from when \$1 is spent with a given industry, inputs from other industries and value added in the form of remuneration of employees and operating surplus.

The impacts at a regional level are calculated using these coefficients but applying them to the region's industry structure as indicated by comparative employment by industry.

It should be noted that the resulting coefficients at regional level result in order of magnitude estimates only and should not be taken as giving precise figures.

The input/output coefficients used in the following are based on Tables derived for the Cairns region based on national coefficients for 2014-15 and taken to be approximately representative across the construction sector in the wider area.

Coefficients used are as follows.

Industry Classification	Initial Output	Impact on GRP incl "Flow-on"	Initial Employment	Total Employment incl "Flow-on"
	\$m	\$m	No.	No.
Civil & Heavy Engineering	\$1m	\$0.84m	0.90	4.25
Construction Services	\$1m	\$0.82m	2.54	6.05

In the case of Civil and Heavy Engineering, not all is accounted for by civil contractors which, in the northern regions, would have a higher proportion of workers per \$1m of output.

Based on information from industry, it is estimated that the ratio would be more like \$600,000 per person employed, ie. 1.7 employees per \$1m of output with total employment including "flow-on" estimated at about 5.0.